



Gastromotive dining: Using experiential multisensory dining to engage customers

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ABSTRACT

We live in an 'experience economy', in which consumers value the experiences offered by brands in some cases seemingly over the utility of the goods or services they offer. Over the last quarter of a century or so, the world of marketing has seen a clear shift towards a more experiential form of consumer, press, and influencer engagement. It is striking how many brands are currently trying to tap into the power of experiential events/marketing. This shift has led to an increased interest in the delivery of immersive multisensory experiences. Few experiences can tap in to all of the senses quite as effectively as carefully-curated gastronomical encounters. This paper provides a case study exploring the development of one such multisensory dining concept created recently on behalf of a German luxury car brand by the London-based design studio Kitchen Theory. A multi-course multisensory immersive dining experience was developed in which the various courses were designed to mirror, amplify, imitate, illustrate, and/or pair with the key conceptual content contained within a series of emotive branded videos.

1. Introduction

It has been suggested that we live in an 'experience economy', in which a growing number of consumers value the experiences offered by brands in some cases seemingly over the utility of the goods or services themselves (e.g., Pine and Gilmore, 1998, 1999). In fact, over the last quarter of a century or so, the world of marketing and public relations has seen a marked shift towards a more experiential form of consumer, press, and influencer engagement (Arrigo, 2016; Carù and Cova, 2007). The shift towards more experiential forms of marketing can be seen with brands selling goods such as perfume, electronics, luxury cars (Spence, 2021), fashion and alcohol (Spence, 2019), through to those companies offering services such as online streaming, airlines (Spence, 2017b), tourism (Dionísio et al., 2013), and increasingly also hotels/hospitality (see Spence, 2022b; for a review).

It is striking how so many brands want to tap into the power of experiential events/marketing as a way of engaging with their consumers in a manner that is more meaningful, and that, at least in the most successful cases, helps to create an association of their business with positive emotions and memories. This shift has led to an increased interest in the delivery of immersive and multisensory experiences. The

idea that an experience can be more memorable and immersive the more senses it stimulates, has led to a growth in the number of multisensory experiences being developed. As few experiences can tap into all five senses quite as effectively as eating and drinking, branded multisensory dining experiences have themselves become something of an emerging trend across the globe (<https://www.eventmarketer.com/article/stella-artois-sensorium-immerses-consumers-multi-sensory-dining-experience/>). This paper provides a case study exploring the development of one such concept for a German luxury car brand by the North London-based design studio Kitchen Theory.

1.1. Multisensory experiential driving/dining

Humans are sensory beings, our senses are how we connect with, and internalise, the world. Driving, like dining, is a fundamentally multisensory activity, which engages multiple senses at any one time (see Ho and Spence, 2008, 2013; Spence, 2012). Each activity is guided by its own sensory touch points; the feel (be it the weight of the car door or that of the cutlery (Michel et al., 2015), the visual beauty of a dish or that of a car (Spence, 2021), the luxurious texture of leather on a car seat or dining chair (cf. Spence and Piqueras-Fiszman, 2014). All of these

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elements, and many more, make up our multisensory experiences, be they while driving or while dining. In fact, all experiences are, by their very nature, multisensory (Spence, 2021).

Automotive marketers are constantly looking for new ways to differentiate their brand and tell their story (e.g., Spence, 2021; Spence, 2013). Luxury car manufacturers do not simply design their automobiles with the sole intention of transporting the driver from one place to another. Instead, they are increasingly trying to curate driving experiences.¹ Likewise, many of the most forward-thinking dining experiences around the world, such as those designed by Kitchen Theory (<https://kitchen-theory.com/>), are intended not simply to fulfill the human need to eat for survival, rather the aim is to curate dining experiences that are both memorable and remarkable, and that help to tell an immersive multisensory story (cf. Anon, 2019; Rose, 2012).

The design of the experience was unlike any other collaborative project developed between a chef and an automotive brand. This concept is not just a dining experience designed for a luxury car brand, this is an experience that has been designed as if it were the brand. Using its philosophies, values, and core messages, in this case, progress, innovation, excitement, simplicity, and charm. As such, each of the canapés/courses was conceptually designed off of the back of a series of TV commercials selected by the luxury car brand. Each of these videos was screened ahead of the related canapé/course being served. The gastronomic challenge was how to translate, or match, the key emotions, concepts, or ideas that had been captured, or expressed, in the videos, in culinary form (see also Pigott, 2015). One can, of course, see such activations as falling squarely within the growing field of sensory marketing (e.g., Cooper, 2013; 'Does it make sense?', 2007; Hilton, 2015).

2. The Gastromotive dining experience

The guests (typically numbering ten per service) were chauffeur-driven in the company's flagship model car to an undisclosed venue (actually the KT studio). There, they were greeted by the chefs who escorted them from the car to the reception, where they were served Champagne. They were invited to walk around the KT gallery/reception area where they were given the opportunity to learn more about KT's research from the images and text displayed on the walls (see Spence, 2017a). The hostess then split the guests into two groups: Each group was invited into a screening room to watch a brief video about gastrophysics (see Spence, 2017a) followed by an award-winning TV commercial by the luxury car brand entitled 'Clowns'. Once the guests came out of the screening room, they were sent up to the study with their group. There, they were given several sensory tests; including PTC taste strip to highlight the genetically-determined differences in taste (see Spence, 2013, 2017a); the 'jelly bean test' (e.g., see Bartoshuk, 1974); a selection of nostalgic smells associated with the circus/fairground. In particular, the aromas of popcorn, candyfloss, and peanut were presented on fragrance strips (to separate the smells from their source) which the guests were then encouraged to try and identify.

The guests were then taken to the kitchen pass: The lights were turned red (i.e., the most arousing colour, according to science; Mikelides, 1990; Spence, 2021; Wilson, 1966), carnival-type music was played over the loudspeakers, carnival stripes (i.e., red and white) were projected onto the dining table and the brand logo was displayed in carnival-style lights. One of the chefs introduced the idea of how the

'Clowns' advert (that had been played in the screening room) was connected to the series of canapés that were to follow. The guests were served a candyfloss Champagne cocktail that was made in front of them along with a modernist brandy snap (Spence Corujo and Youssef, 2019a; Spence, Sanchez and Youssef, 2019b) (see Fig. 1). Once the guests had finished their first canapé, they were invited to move to the dining table. There, another chef introduced the next canapés; namely a brioche & duck liver parfait (shaped to look like a toffee apple; see Spence et al., 2019a, b), followed by a caramelised onion jam doughnut, and peanuts (see Fig. 2).

As has been discussed elsewhere, candyfloss is an especially intriguing foodstuff, given the format's intimate association with both sweetness and childhood fairground/theme park fun (Spence et al., 2019a). Furthermore, the transformative nature of the process involved in its preparation can also be seen as giving it a distinctively modernist/molecular gastronomy feel (Spence and Youssef, 2018; cf. Arboleya et al., 2014). In fact, the sensory cues associated with the fair, circus, or theme park can all be thought of as potentially nostalgia-inducing triggers that may help to induce positive emotion in diners (and, by so doing, also help to make the guests' meal experience more enjoyable; see Leonor et al., 2018; Reid et al., 2015; Spence, 2022c; Spence and Youssef, 2019; Tweedy, 2015; Vignolles and Pichon, 2014).

Between each course, the lights turned red, the brand's logo was

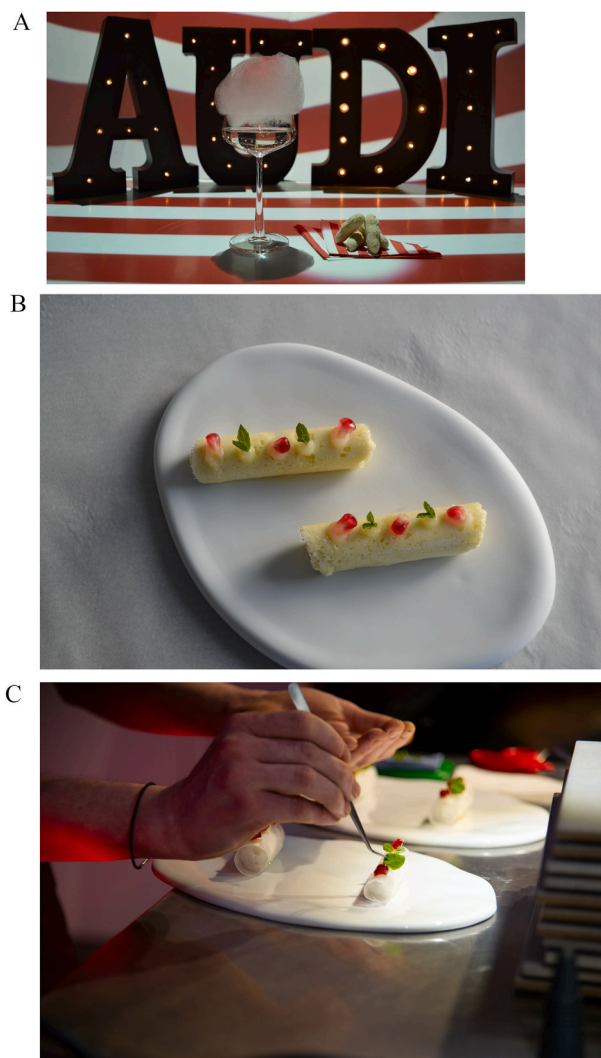


Fig. 1. A) Candyfloss Champagne served with peanuts shown in front of brand logo and big-top visuals. B) Finished modernist brandy snap canapé, as served to guests. C) Finishing the topping of the brandy snap.

¹ At this point, it is worth considering what exactly is meant by an 'experience', and how a driving experience might be different from driving. Much has been written in recent years about the design of multisensory experiences in the context of dining (Seyitoğlu & Ivanov, 2022), and elsewhere (e.g., Velasco and Obrist, 2020). According to Yrjölä et al. (2019), customer experience can be defined as the overall experience formed as a result of the interaction with service providers. Experiences are sometimes co-created with the consumer (Gentile et al., 2007).

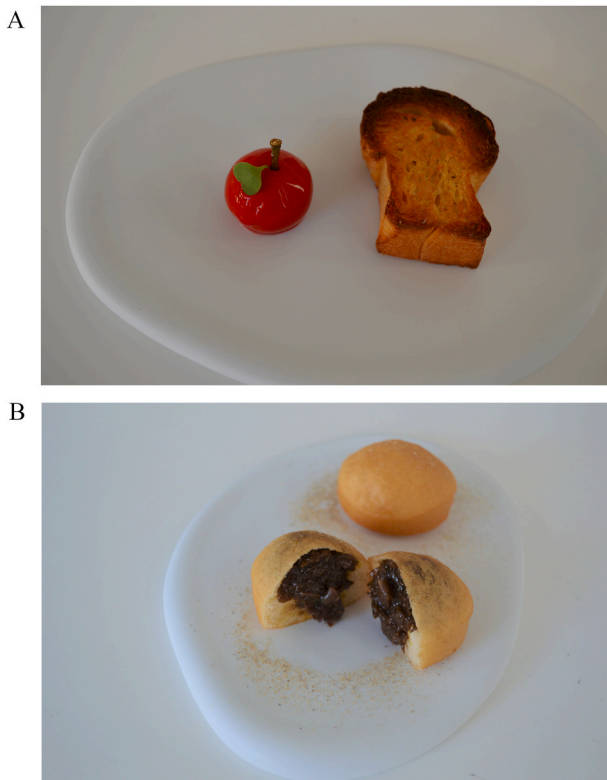


Fig. 2. A) The brioche and duck liver parfait, shaped to look like a toffee apple canapé. B) Caramelised onion jam doughnut, and peanuts.

projected directly onto the surface of the table, and the sound of a heartbeat was played over loudspeakers in the dining studio. The latter sound was chosen as a kind of sonic ‘palate cleanser’ (cf. <https://saucydrummings.com/blog/sound-and-flavour/amp/>). It was designed to build anticipation in the guests’ minds (cf. Kallman and Isaac, 1977; Pollock et al., 2006; Tajadura et al., 2006; Woll and McFall 2006). The brand’s sonic logo was inspired by this sound (McLeod, 2021, pp. 189–190; cf. Mas et al., 2021).² This ‘default’ setting between courses was used to build anticipation in the guests’ minds and to ensure that the dishes each had their own character. It also helped to emphasize the changes in all of the sensory elements, projections, lighting, and sound. The default setting used here was designed to feel both intense and, at the same time, immersive (cf. Abend, 2019; Bergman, 2012; Gonzalez, 2013; Moore, 2015; Pursey and Lomas, 2018).

3. The Gastromotive meal

3.1. Course 1: THRILL

The host introduced the first course by saying: “The next course is entitled ‘Thrill’ and is based on the TV advert that you are about to watch.” The TV advert was then played on a large monitor situated on the wall of the dining studio. After the advert had finished, the host continued by saying: “The sound of a roaring engine can increase your heart rate, raise the hairs on the back of your neck, and even dilate your pupils. And this is something we are fascinated by as chefs; how can we tap into our guests’ emotions in order to heighten their multisensory dining experience.” (see also Weiss, 2002). He continued: “We isolated the sound in this ad and paired it with flavours designed to have a similar effect in the mouth. This course has been designed to have an

additive effect by stimulating your other senses, most importantly to thrill your taste buds and trigeminal nerve (that reacts to the heat of chilli and the cooling of menthol.” For further information on the trigeminal system, see Viana (2011; see also Cayeux et al., 2023, for recent work specifically considering how to capitalize on trigeminal sensations in cuisine), while for further research on the relationship between threat, arousal, and pupil dilation, the interested reader is directed to Van Steenberghe, Band, and Hommel (2011) and Wang et al. (2018).

The host continued: “This course is about pure thrill and excitement. In a moment, you will be asked to place your headphones on. Three elements have been placed in front of you. The first is an edible parcel filled with a mixture of smoked Maldon salt and xylitol (a sugar that elicits a cooling effect in the mouth; see Ahuja et al., 2020) the combination of ingredients will not only activate your taste buds but also stimulate your trigeminal nerve. This is to be taken once the engine has started to rev. up (this happens after about 20 s). Once the engine has started to rev up and you have eaten the salt mix, it is time to follow up with our ginger and tequila shot, to be drunk through the straw in the glass. This will activate other parts of your trigeminal nerve, delivering a sensation of heat in the mouth. Wait a few seconds, then follow this with a slice of lime which has been infused with nitrogen oxide, essentially it is a carbonated lime that will both ease and refresh your taste buds.” The host concluded by briefly reiterating the instructions (see Fig. 3).

As well as trying to match, or augment, the sensations that the guests’ heard, this multisensory match can be seen as fitting within the growing interest in pairing sensations, be that of food with drink (see Spence, 2020a, for a review), or increasingly sound with taste (Roncero-Menendez, 2015; see Spence, 2020b, for a review). At the same time, however, it should also be recognized how the immersive multisensory design of hospitality environments has been shown to bias people’s preferences as well (Sester et al., 2013; see also Crofton et al., 2021; van Bergen et al., 2021). Separately, there is also an extensive literature on the psychological associations with, and psychoacoustic design of, car engine noises (see Hsu, 2019; Hull, 2023; Spence, 2021a).

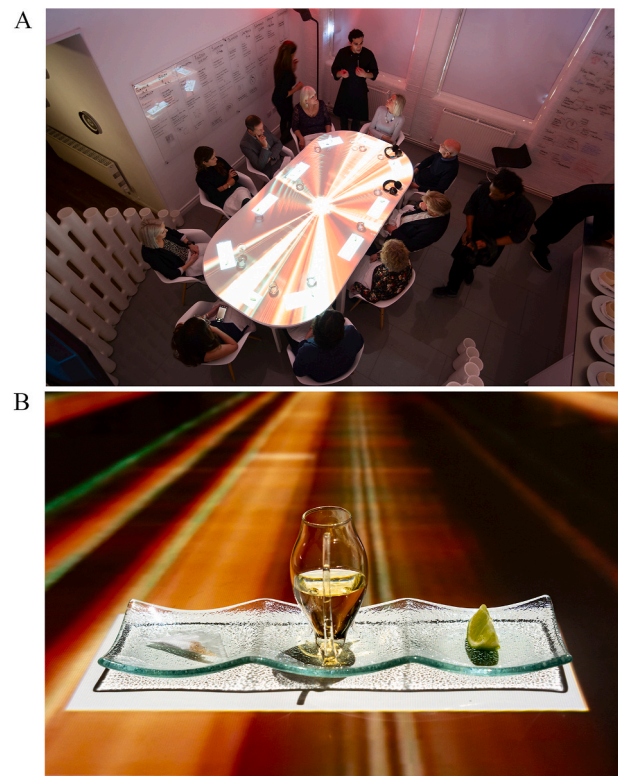


Fig. 3. A) The chef/host explaining the Thrill dish to guests. B) Side view of the three elements in the Thrill dish.

² There has, in fact, been much intriguing sound design/sonic branding work from the car companies (e.g., see BMW AG; Nissan Motor Corporation).

3.2. Course 2: BIRTH

The host introduced the second course, as follows: “This next course is entitled ‘Birth’ and is based on the TV advert you are about to watch.”³ The TV advert was then played on a large monitor. “The [car brand] values Simplicity, and this is reflected in both their design aesthetic and the selection of ingredients used in the next course. What could be simpler and more representative of birth than the humble egg?” (Dish is served). “There is a simplicity and familiarity with the ingredients and flavours used in this dish. However, there is also the [car brand’s] progressiveness which has influenced how this dish has been developed. Within the ostrich egg shell you will see an aerated hollandaise (cooked at 60 °C for 2 h), red Leicester and smoked paprika cheese (the bubble that looks like a yolk, made by a modernist cooking process called spherification; see Youssef, 2013). To the side of the egg, we have this fresh baked Crystal Bread (made with a dough of 90% hydration), and (seasonal vegetable) which has been cooked in a vacuum pouch at 75 °C for 20 min. This course is simplicity itself, combined with progressive execution. You will also notice this dish comes with dining tweezers to dip your ingredients into the hollandaise. Enjoy.” (see Fig. 4). Notice here how the use of unconventional dining utensils (specifically, tweezers) also fits into contemporary attempts to question the status quo, as far as our use of conventional cutlery forms is concerned (Spence, 2022a).

From a culinary perspective, one might consider the various ways in which complexity may present itself in a specific ingredient or flavour (Spence and Wang, 2018), in a drink or recipe for a dish (Spence, 2018b), as well as in a menu or meal experience (see Spence, 2018a, for a review). There has been something of a move among high-end chefs to roll-back from the overly-complex dishes that were something of a hallmark of modernist cuisine/molecular gastronomy until just a few years ago (see Spence and Youssef, 2018, for a review; though see also Tristano, 2015, on the dangers of oversimplifying one’s food offering). At the same time, from an automotive perspective, it is also interesting to consider the ongoing tension between complexity and simplicity (Gaffar and Kouchak, 2017; Ho and Spence, 2008).

3.3. Course 3: SPIN

The host then introduced the next course by saying: “Course number three is entitled Spin and is based on the following TV advert.” The TV advert was then played on a large monitor. The host then continued: “Part of the [car brand’s] charm lies in its willingness to do things differently. Unlike most adverts for sports cars with fast-paced, jumpy images, the one you just watched saw power and control exemplified using slow motion. So, in this dish, we see strong and powerful flavours like duck, olive, black garlic, and Mexican Mole sauce all come together in a controlled, and hopefully you will agree well balanced, arrangement of flavours. To slow things down, we have cooked the duck breast using the sous-vide method at 62 °C for 80 min, while the black garlic takes over 200 h to create (see Spence, submitted, submitted, on the resurgence in popularity of this particular ingredient). A slow food if ever there was one (see Spence and Piqueras-Fiszman, 2014, on the enduring tension between ‘slow’ and ‘fast’ food). This course is all about strength and power, controlled.” (see Fig. 5).

³ As one reviewer of an earlier version of this manuscript correctly noted, ‘Birth’ would intuitively seem like a more natural concept with which to start a menu. However, from a culinary perspective, the order in which the dishes (and hence videos) were presented to diners was ultimately dictated by the desire to deliver a conceptually comprehensible order of service for the meal (i.e., meaning that the video associated with dessert had to be presented last).



Fig. 4. A) Bird’s-eye view of the Birth dish; B) Overhead view showing the seasonal vegetable and C) the unconventional cutlery (i.e., tweezers).

3.4. Course 4: SNOW

The host introduced the next course by saying: “Our penultimate course is a pre-dessert inspired by my [i.e., the chef’s] favourite of all the adverts featured on this menu ‘Snow’.” The TV advert was played on the large monitor, before the host continued: “The [car brand] gliding across the snowy plane, almost looks as if it were gently levitating. The pure white aesthetic and the snow itself all came together to inspire this next course. Light and delicate like snow, the next course is made of a yoghurt mousse, poached in liquid nitrogen to form a frozen outer shell. This course is about excitement, simplicity, and advancement coming together in harmony to produce beauty”. The chefs would then ‘cook’ the liquid nitrogen yoghurt ‘meringues’ table-side, and serve them on the levitating plates that had been placed in front of each guest (see Fig. 6). The amazake ice cream snowball had a white chocolate shell and contained cooling xylitol. Notice how this pre-dessert helps to emphasize the notion of floating through the use of futuristic plateware. At the same time, the tableside preparation of the pre-dessert also allowed for an element of theatricality to enter the proceedings (see Spence, 2017a).

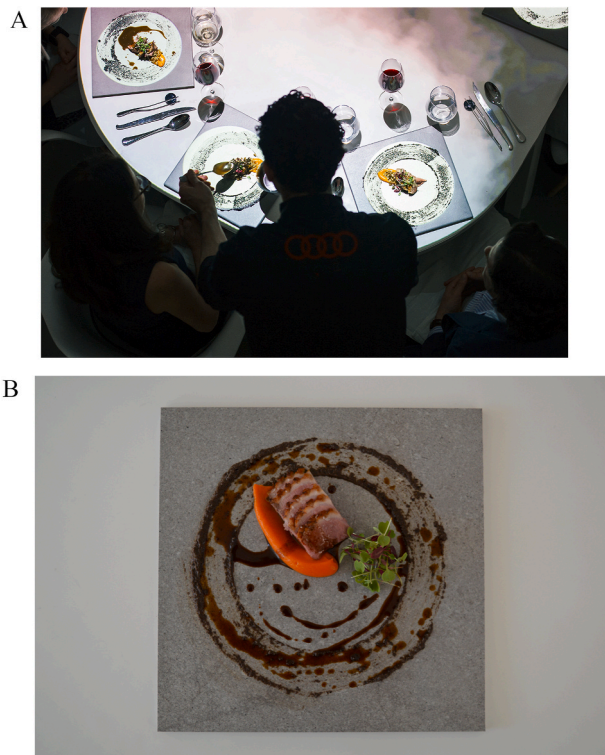


Fig. 5. A) Bird's-eye view of the Spin dish plated directly onto the dining table; B) Overhead view highlighted the main course.

3.5. Course 5: REACT

The host introduced the final course on the menu by saying: “Our final course is called React and is based on the TV advert you are about to watch. The TV advert was then played on the large monitor. The host then continued: “The whole meal this evening/afternoon has been designed to provide a glimpse of the future of dining. The future of dining and driving are both striving towards many shared ambitions; chief among which is a desire to innovate and deliver not just a simple product or service but an experience that enhances the primary activity, elevating it to a place which engages with us in a whole new way. The [car brand] which I drove was not only a luxurious and smooth ride it was also transformative in that it can help to make you a better driver. This is an intelligent automobile that has a mind, and since we at Kitchen Theory are fascinated by the relationship between food and the mind, we decided to design a dish based on ingredients proven to enhance cognitive function. What if, as part of a healthy diet, even dessert could be made of ingredients that improve your body and mind's well-being. So, taking inspiration from the track's title ‘I wish I had a brain’ we have combined a selection of ingredients said to improve your cognitive abilities (albeit temporarily). Like the [car brand], this next course is inspired by the future, experience, and style ...” The music started to play as the chefs began to plate the course in a choreographed manner directly onto the surface of the table (see Fig. 7). The dish consists of turmeric mousse, coffee toffee, hazelnut biscuit, and raspberries.

Here, it is interesting to consider the alerting function of various food-related aromas, such as, for example, peppermint (Spence, 2021). Ginger has also been reported to exert an alerting effect (Alkuraishy, 2015), while there is some evidence to suggest that drinking tea may facilitate creative thinking (Einöther et al., 2015). A few years ago, the authors developed a meal box concept for airline passengers, where each of the food elements was designed to deliver a cognitive benefit (see Delahaye, 2017).



Fig. 6. The Snow dish served in a levitating bowl.

4. Conclusions

Developing a meal around a series of brand videos represents a stimulating challenge for engaging culinary creativity (see Arboleya et al., 2008). The development of such immersive multisensory dining experiences also fits within a growing interest in ‘Sensploration’ (e.g., Aroche, 2015; Pursey and Lomas, 2018), as well as aligning with the relentless rise of the ‘experience economy’ (Arrigo, 2016; Carù and Cova, 2007; Pine and Gilmore, 1998, 1999). However, taking a historical perspective, it is also interesting to consider the link to the Italian Futurists (Marinetti, 1932/2014). The Futurists, including leading exponents such as F. T. Marinetti, were fascinated by the idea of speed and the machine. In Marinetti's *The Futurist cookbook*, one can find recipes for a number of mostly inedible dishes presenting ideas related to the machine age in food form, as in the chicken stuffed with ball bearings. It is perhaps worth noting that aluminum foil was also a very new material during the period when the Futurists were most active. Indeed, there are various reports of Futurist events where the walls and tables were all covered in foil (see Spence, 2021a). In fact, though little mentioned nowadays, it is surprising just how many of the ideas that one finds in molecular/modernist cuisine were already mentioned by the Futurists, back in the early decades of the 20th century (see Spence, 2017a; Spence and Youssef, 2018). Looking to the future, there would also appear to be emerging opportunities around the design of immersive techno-emotional gastronomic experiences for those associated with the first wave of space tourism (see Spence, 2023; <https://kitchen-theory.com/space-tourism/>). In a way, the current generation would appear to be just as fascinated, and in awe, with the idea of space travel as the Futurists once were with speed, the machine, and tin foil.

One of the questions to emerge from this project concerns what can

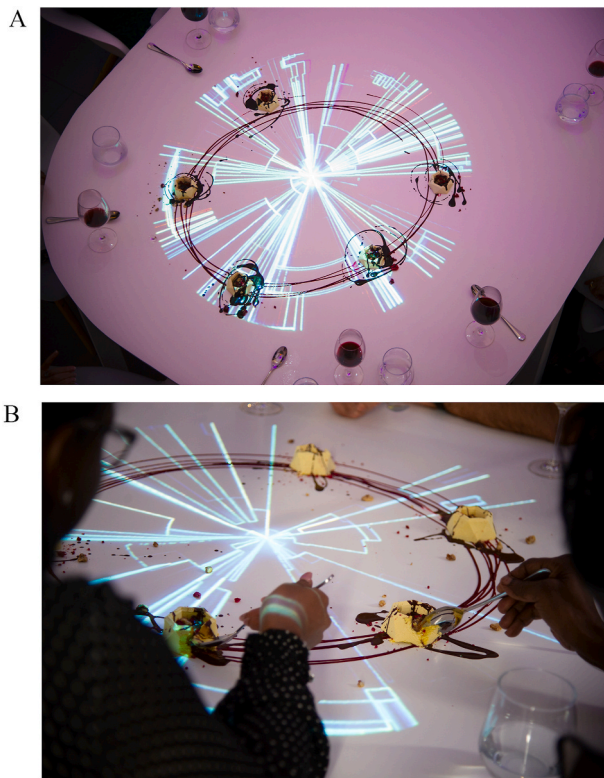


Fig. 7. A) The React dish plated directly on the surface of table. B) Diners enjoying their dessert.

marketers learn from chefs (Velasco et al., 2019). At the current stage of conceptualization/implementation, it would seem too premature to start talking about theoretical underpinnings for such an endeavour. Nevertheless, one of the dangers to be aware of in the design of such multisensory experiences is ‘sensory overload’ (Malhotra, 1984; Spence, 2021) and/or the possibility of creating an experience that is too complex for the diners to wrap their heads around (see Biderman, 2017). In passing, it is also interesting to note how a number of car brands product electronic products for kitchen use (e.g., see <https://getjerry.com/insights/auto-industry-dabbles-food>; Ramsey, 2021).

The challenge for the multisensory dining experience outlined here was to make something that was memorably delicious, both on and off the plate. The idea of trying to directly engage the diners’ emotions through their taste buds can be seen in light of the notion of ‘technical/emotional cuisine’, a concept that first appeared in the “Groupe des Huit” manifesto a few decades ago (see Weiss, 2002, pp. 122–123). In recent years, reference to the concept of techno-emotional cuisine has also appeared in relation to the highly-innovative work of a number of other chefs, including Paul Pairet, of Ultraviolet in Shanghai, and Spanish chef Andoni Aduriz of Mugaritz (see Robinson and Pigott, 2012; Spence and Youssef, 2018; see also Spence and Youssef, 2022).

One of the main limitations with the present dining concept was that since it was offered as a sponsored event for a car brand, it was not possible to formerly assess the success of the concept (e.g., by sending out, or emailing, questionnaires after the event to understand more about what diners had taken away from the dinner, in terms of brand values etc.; see Tsaour and Lo, 2020). Looking to the future, it would obviously be ideal if such formal feedback could be collected to determine the extent to which the diners took away (and, more importantly, retained) the ‘appropriate’ messaging. That being said, it should perhaps be remembered that none of the other ‘experiences’ offered by the brand for new purchasers of their cars had an explicitly educational/or ‘edutainment’ component.

Finally, it is worth considering whether the multisensory dining

experience was more associated with that of the passenger (i.e., a passive observer) rather than that of the driver. In fact, it remains an open question as to how a multisensory dining experience could be engineered/delivered such that it would capture more of the active aspects of driving (i.e., of being in control; perhaps the most obvious analogy here would be to have diners actively involved in some aspect of the preparation of their dishes). That being said, it is striking to consider just how much of their food North Americans have been estimated to consume while in their car (see Steel, 2008).

Implications for gastronomy

At its best, dining is a highly-immersive emotional experience that engages all of the senses; On occasion, it may also involve an element of storytelling. As such, the world of gastronomy is well-placed to serve up content to feed the growing ‘experience economy’. A case study is described highlighting a recent attempt to deliver a ‘techno-emotional’ multisensory experience by creating a multi-course meal, where each of the dishes was linked to an international car brand’s advertising. The challenge for the culinary team involved trying to match, illustrate, pair, and/or translate the conceptual, cognitive, and emotional content of the brand’s advertisements into an edible form through the targeted choice of ingredients, recipes, modernist food preparation techniques, and visual presentation of the dishes/drinks. Taken together, this project serves to illustrate how culinary creativity can be effectively harnessed to help develop multisensory tasting experiences that can help to feed the growing ‘experience economy’ by attempting to embody brand values in edible form.

Author statement

All parts of the manuscript were written by C.S. & J.Y.

Data availability

No data was used for the research described in the article.

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